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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HO, DUC CHI

ART UNIT PAPER NUMBER

2665

DATE MAILED: 06/23/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/592,683

Applicant(s)

PORTER ET AL.

Examiner

Duc C Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 10, 11, 13-17, 19, 20, 24, 25, 27 and 28 is/are rejected.
- 7) ☒ Claim(s) 4, 7-9, 12, 18, 21-23 and 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9&11.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-3, 5-6, 10-11, 13-17, 19-20, 24-25, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karlsson et al. (US 5,898,928), hereinafter referred to as Karlsson.

Regarding claim 1, Karlsson discloses an adaptive frequency allocation (corresponding dynamic frequency allocation) in a telecommunication system, in which the system continue to update and store the filtered output interference levels, and to provide a channel allocation

strategy automatically in response to changes such that to replace a high interference with a lower interference channel.

(a) monitoring the radio conditions on at least the allocated channel in the region (the cellular mobile radio telephone system 100-fig. 1 measures the quality and selects signal quality allocated for each cell, see col. 4, lines 32-62, and col. 14-line 45 to col. 15-line 8);

(b) generating one or more channel metrics corresponding to the monitored radio conditions on the channel (each frequency channel is measured for signal quality in term of signal strength, see col. 6, lines 20-47); and

(c) reallocating a different channel to at least those regions where the generated channel metrics indicate that the allocated channel metrics indicate that the allocated channel in those regions is suffering interference (the MSC 303-fig. 3 based on the comparison at uplink signal strength measurements between a selected frequency channel filtered and a candidate frequency channel filtered within a cell, and decides whether or not to initiate an exchange to replace frequency channel which has the highest interference level with a lower interference channel, see col. 6-line 27 to col. 7-line 39);

Karlsson, however, doesn't specifically teach the steps of monitoring, generating, and reallocating being continuously repeated in order whereby channels may be dynamically reallocated to regions during continuous network operation.

One skill in the art would recognize the advantage of having these steps to be continuously repeated in order that the channels having high interference among regions would be exchanged automatically with those of lower interference throughout a network operation.

It would have been obvious to one of ordinary skill in the art, at the time invention was made, to employ steps such as: measuring the quality of each channel, measuring each frequency channel with respect to the signal strength continuously repeated in order into the system of Karlsson such that to exchange the frequency channels having the highest interference level with those of lower interference level in such a way presenting an automatic and adaptive frequency allocation system to improve both speech quality and traffic handling capacity.

Regarding claims 2, and 16, Karlsson discloses the measurement of the received signal strength of all channels.

Regarding claims 3, and 17, Karlsson's system is capable of measuring a signal-to-noise of transmissions between the base station and the mobile units.

Regarding claims 5-6, and 19-20, Karlsson's system is capable of measuring the signal strength and interference with respect to quality at the base station and at the mobile unit.

Regarding claims 10, and 24, in Karlsson the base station performs the measurement to all channels for an exchange of lower interference channel in a distributed way, see col. 11, lines 50-67.

Regarding claims 11, and 25, Karlsson discloses the measuring step (monitoring) to a plurality of channels in which the measurement with respect to signal strength and interference are taught, see fig. 3, col. 6-line 20 to col. 7-line 39.

Regarding claims 13, and 27, Karlsson discloses an exchange of a high interference channel for a lower interference channel.

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Regarding claims 14, and 28, Karlsson's system is capable of allocating a channel among the candidate channels to a cell, e.g. cell 4-fig. 1 in such a manner that other candidate channels allocated to each of the surrounding cells of the cell 4.

Regarding claim 15, this claim has similar limitations as claim 1. Therefore, it is rejected under Karlsson for the same reasons set forth in the rejection of claim 1.

Allowable Subject Matter

4. Claims 4, 7-9, 12, 18, 21-23, and 26 are objected to as being independent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bach (US 6,353,742); Wallstedt et al.(US 6,466,793); Kalmanek et al.(US 6,094,424) are cited to show a control signaling and dynamic channel allocation in a wireless network, which is considered pertinent to the claimed invention.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (703) 305-1332. The examiner can normally be reached on Monday through Friday from 7:00 am to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 703-308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

8. Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Patent Examiner

A handwritten signature in black ink, appearing to read 'Duc Ho', written over the printed name.

Duc Ho

06-18-04